

**Epidemiology of Cancer in Monroe County**  
**Monroe County Department of Public Health**  
**Revised April 2012**

**Introduction**

The general public is very concerned about cancer in the community. Many residents believe that cancer rates are high in Monroe County and they are increasing. This report will help citizens understand the local data about cancer incidence and mortality.

**Background**

Public Health Law requires that all physicians, dentists, laboratories, and other health care providers report every case of cancer or malignant disease to the Cancer Registry of the New York State Health Department (NYSDOH). Since the 1980's, the NYSDOH has been publishing county, state and upstate reports that contain five year average annual incidence (newly diagnosed cases) and mortality numbers, and age-adjusted rates, by site of cancer and gender. These reports can be found at:

[www.health.state.ny.us/statistics/cancer/registry/](http://www.health.state.ny.us/statistics/cancer/registry/)

Because our population is aging, and most cancers occur more often in older people, "unadjusted" cancer rates are increasing. The rates in this report are adjusted for age. By doing the adjustment, the aging of the population is eliminated as a cause for changes in the rates of cancer.

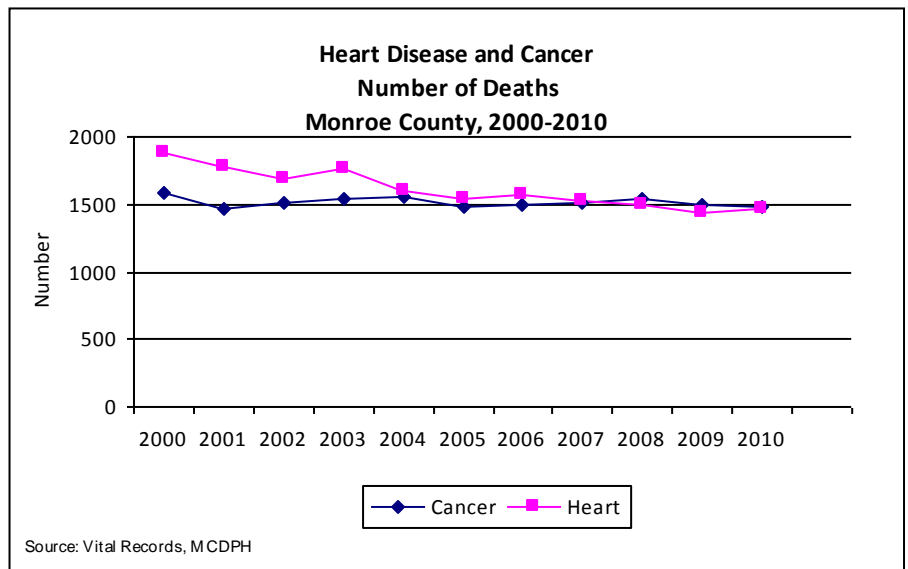
Included in these reports, are ninety-five percent confidence intervals for the age-adjusted rates. A confidence interval is a range around a measurement that conveys how precise the measurement is. For example, an age-adjusted breast cancer incidence rate of 138 cases per 100,000 women, with a 95% confidence interval of +/- 1.0, means there is a 95 percent chance that the true rate is between 137 and 139 cases per 100,000 women. Confidence intervals are used to determine if the difference in rates is statistically significant. If confidence intervals do not overlap, the difference in the rates is statistically significant. If one rate falls within the confidence interval of another rate, the difference is not statistically significant. On some of the graphics in this report, the confidence intervals are so close to the lines that they appear to be indistinguishable from the lines. When this happens, it means that the rates are very precise.

This document provides a summary of Cancer Registry reports for Monroe County and comparisons to New York State exclusive to New York City. In addition, case fatality rates by cancer type are presented as crude measures of prognosis, or inversely - survival. Case fatality rate is the ratio of the mortality rate to the incidence rate. A higher case fatality rate has a low survival rate

## **Results**

### **Cancer- Leading Cause of Death**

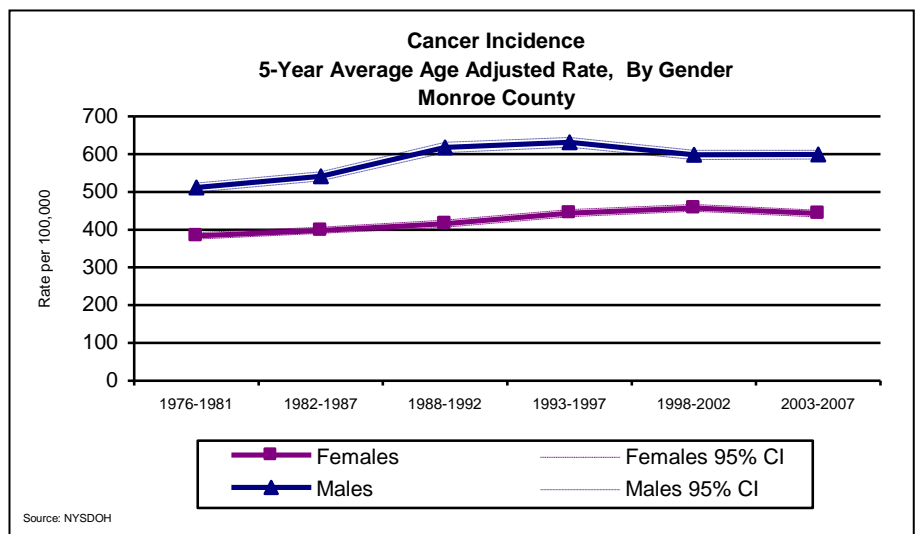
In 2008, cancer became the leading cause of death in Monroe County. Since 2000, the number of deaths due to heart disease declined by 22%, while the number of deaths due to cancer declined only slightly.



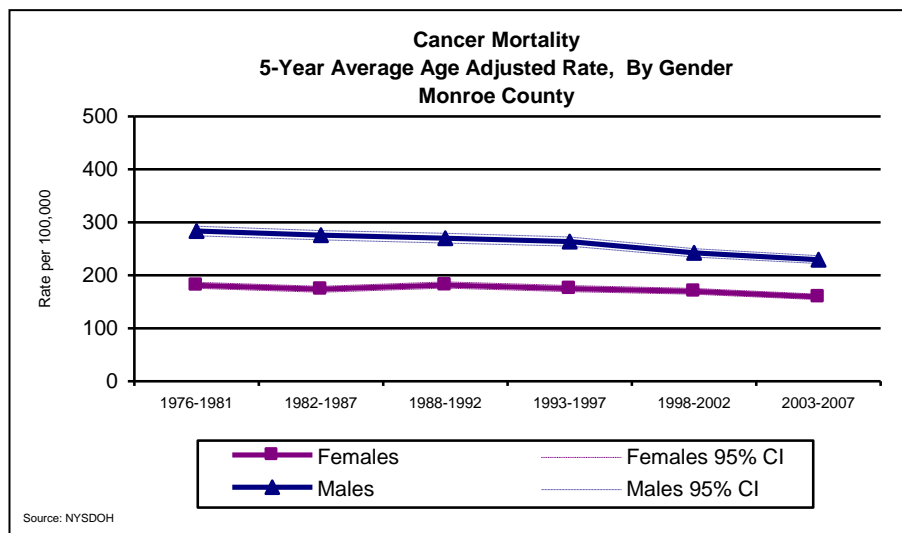
### **All Cancers Combined**

Over 4,000 cancers are diagnosed each year among Monroe County residents and cancer accounts for nearly 1,500 deaths annually.

As shown in the graphic to the right, the cancer incidence rate in Monroe County for males is greater than the rate for females. The incidence rate among males increased between 1976-81 and 1988-92, declined between 1993-97 and 1998-02, and then leveled off. Among females, the rate increased between 1976-81 and 1998-2002, and declined in 2003-2007.



Cancer mortality rates in Monroe County are higher for males compared to females. Mortality rates have declined since 1976.



For the most part, trends in cancer incidence and mortality rates in NYS exclusive to NYC were similar to trends in Monroe County. (not shown in graphic)

In 2003-2007 the incidence rate of all cancers among women was 3% lower in Monroe County compared to NYS exclusive of NYC (453.6/100,000 vs. 465.9/100,000)<sup>1</sup>. In the same time period, the mortality rate among males was 6% higher in Monroe County compared to the rate in NYS exclusive of NYC (229.5/100,000 vs. 216.5/100,000).

### Types of Cancer

The table below shows the average annual number of newly diagnosed cancer cases and the number of deaths due to cancer in Monroe County by gender.

Average Annual Numbers of Newly Diagnosed Cases and Deaths By Cancer Type and Gender, Monroe County 2003-2007			
Males		Females	
Newly Diagnosed Cases	Deaths	Newly Diagnosed Cases	Deaths
Prostate (642)	Lung/Bronchus (216)	Breast (597)	Lung/Bronchus (198)
Lung/Bronchus (272)	Prostate (79)	Lung/Bronchus (253)	Breast (101)
Colorectal (188)	Colorectal (71)	Colorectal (198)	Colorectal (73)
Urinary Bladder (166)	Pancreas (47)	Corpus Uterus and NOS (125)	Pancreas (52)
Non-Hodgkin Lymphomas (85)	Leukemia (40)	Non-Hodgkin Lymphomas (80)	Ovary (46)
Kidney and renal pelvis (81)	Urinary Bladder (32)	Ovary (60)	Leukemia (27)
Leukemia (72)	Esophagus (29)	Leukemia (59)	Non-Hodgkin Lymphomas (26)
Melanoma of the skin (65)	Non-Hodgkin Lymphomas (27)	Urinary Bladder (57)	Corpus Uterus and NOS (19)
Pancreas (54)	Liver/Intra-hepatic bile duct (25)	Kidney and renal pelvis (55)	Brain and nervous system (16)
Oral cavity and pharynx (52)	Stomach (21)	Pancreas (55)	Liver/Intra-hepatic bile duct (15)
Stomach (41)	Kidney and renal pelvis (21)	Melanoma of the skin (51)	Urinary Bladder (14)
Liver/ Intrahepatic bile duct (35)	Brain & other Nervous Sys (18)	Thyroid (50)	Multiple myeloma (14)
Esophagus (28)	Multiple myeloma (15)	Oral cavity and pharynx (28)	Kidney and renal pelvis (13)
Brain & other Nervous Sys (28)	Oral cavity and pharynx (14)	Brain & other Nervous Sys (26)	Stomach (12)
Multiple myeloma (26)	Melanoma of the skin (9)	Cervix uteri (24)	Esophagus (10)
Larynx (26)	Larynx (7)	Stomach (22)	Oral cavity and pharynx (8)
Testis (20)	Thyroid (2)	Multiple myeloma (22)	Cervix uteri (7)
Thyroid (20)	Hodgkin lymphoma (2)	Liver/ Intrahepatic bile duct (15)	Melanoma of the skin (5)
Hodgkin lymphoma (13)	Testis (1)	Hodgkin lymphoma (14)	Larynx (4)
		Esophagus (10)	Hodgkin lymphoma (2)
		Larynx (9)	Thyroid (2)

Source: Cancer Registry, NYSDOH

The most common forms of cancer among males are prostate, lung/bronchus and colorectal. Among women, the most common cancers are breast, lung/bronchus and colorectal. These cancers account for about ½ of the new cases and cancer deaths in Monroe County. The decline in the mortality rates for all cancers combined is mainly due to the decline in rates for the three most common cancers among men (colon, lung, prostate) and two of the three most common cancers among women (colon and breast).

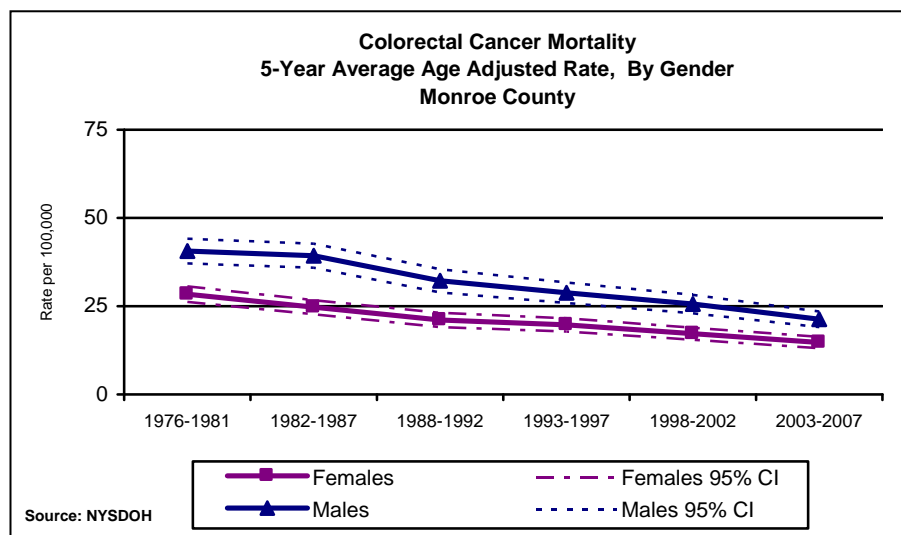
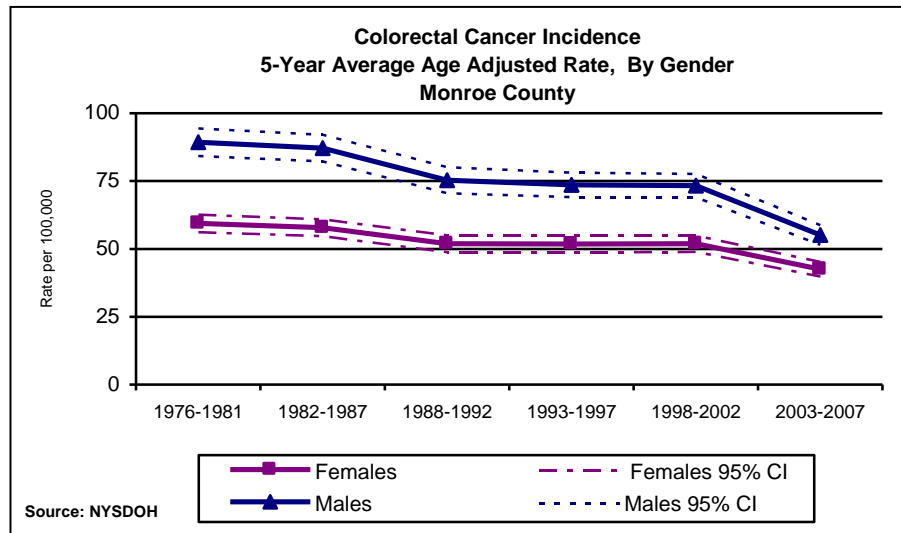
**Case Fatality Rate**

The table below shows the case fatality rate (death rate/incidence rate) by cancer type and gender. One of the major factors contributing to the case fatality rate is the stage in which cancers are diagnosed: the earlier the stage of diagnosis, the better the chance of survival. Cancers of the esophagus, pancreas, lung/bronchus and liver/intrahepatic bile duct have the highest case fatality rates. Most of these cancers are diagnosed in later stages because there are not routine tests to detect these at an early stage. There are routine tests for early detection of colorectal, breast, and prostate. The case fatality rates for these cancers tend to be lower than many other cancers.

<b>Case Fatality Rates Monroe County 2003-2007</b>	
<b>Males</b>	<b>Females</b>
Esophagus (1.0)	Esophagus (1.0)
Pancreas (.88)	Pancreas (.93)
Lung/Bronchus (.80)	Liver/Intrahepatic bile duct (.91)
Liver/Intrahepatic bile duct (.72)	Lung/Bronchus (.76)
Brain and Other nervous sys. (.64)	Ovary (.73)
Multiple Myeloma (.61)	Multiple myeloma (.64)
Leukemia (.58)	Brain and Other nervous sys. (.62)
Stomach (.53)	Stomach (.49)
Colorectal (.39)	Leukemias (.43)
Non-Hodgkin Lymphomas (.33)	Larynx (.40)
Larynx (.29)	Colorectal (.35)
Oral Cavity (.28)	Non-Hodgkins lymphomas (.29)
Kidney Renal Pelvis (.27)	Oral cavity and pharynx (.28)
Urinary Bladder (.2)	Cervix uteri (.25)
Hodgkin lymphoma (.16)	Urinary bladder (.23)
Melanoma (.14)	Kidney renal pelvis (.21)
Prostate (.14)	Female breast (.16)
Thyroid (.11)	Corpus uterus NOS (.14)
Testis (.02)	Hodgkin lymphoma (.14)
	Melanoma of the skin (.09)
	Thyroid (.03)

## **Colorectal Cancer**

Colorectal cancer incidence and mortality rates are higher among men compared to the rates among women. Incidence and mortality rates have declined significantly among both genders in Monroe County.

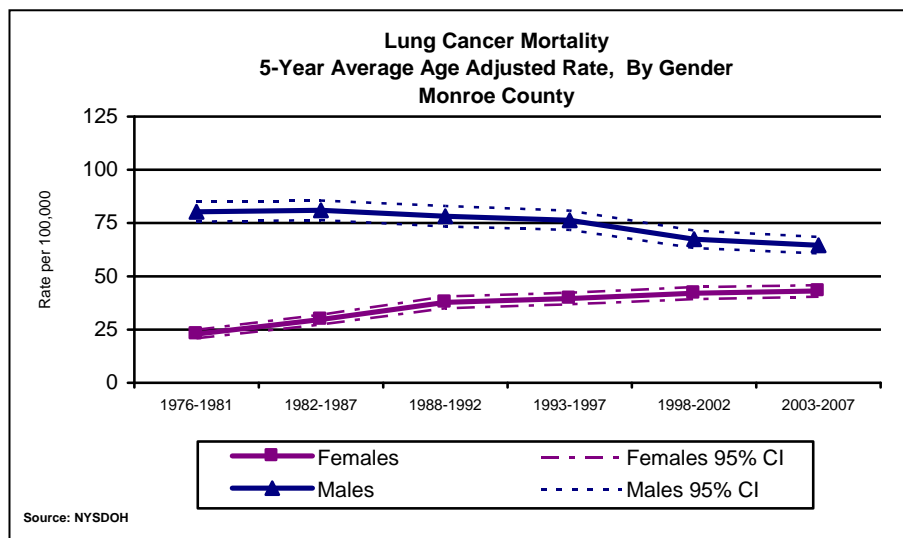
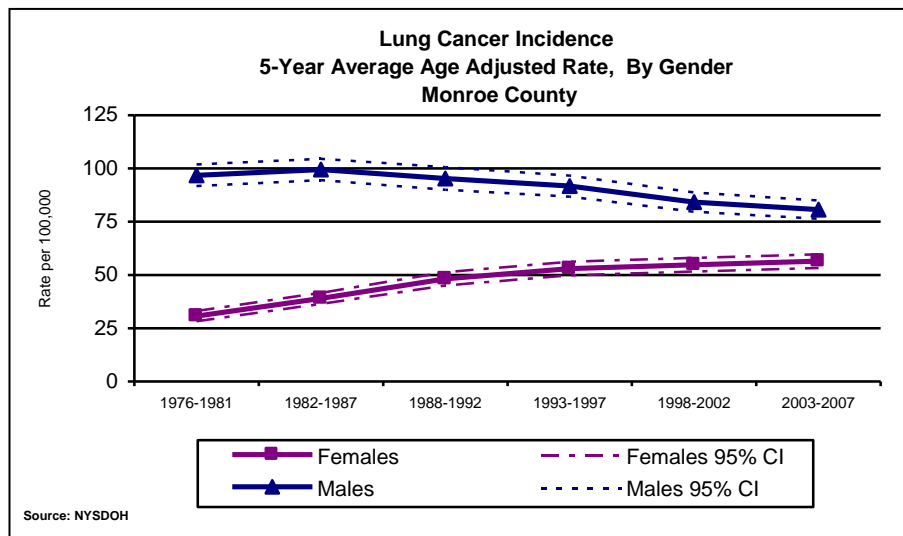


The rates also declined in NYS exclusive of NYC. (not shown in graphic)

Improved screening rates and more removal of pre-cancerous growths are likely contributing to the declines.

## Lung Cancer

Lung cancer incidence and mortality rates are greater for men than for women. The disparity in the rates however is decreasing because rates have declined among men and increased among women.

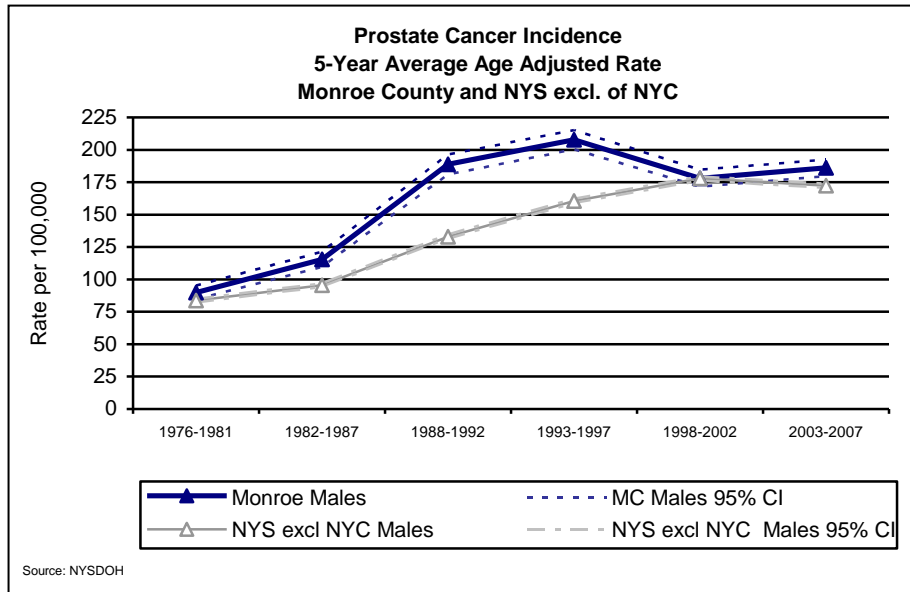


Similar trends have occurred in NYS exclusive of NYC (not shown in graphic) and in the US. The increase in lung cancer among females is attributed to the increase in smoking among women that occurred several decades earlier. While smoking rates have declined among men and women in the past three decades, the rate of decline has been greater among men compared to women.<sup>2</sup>

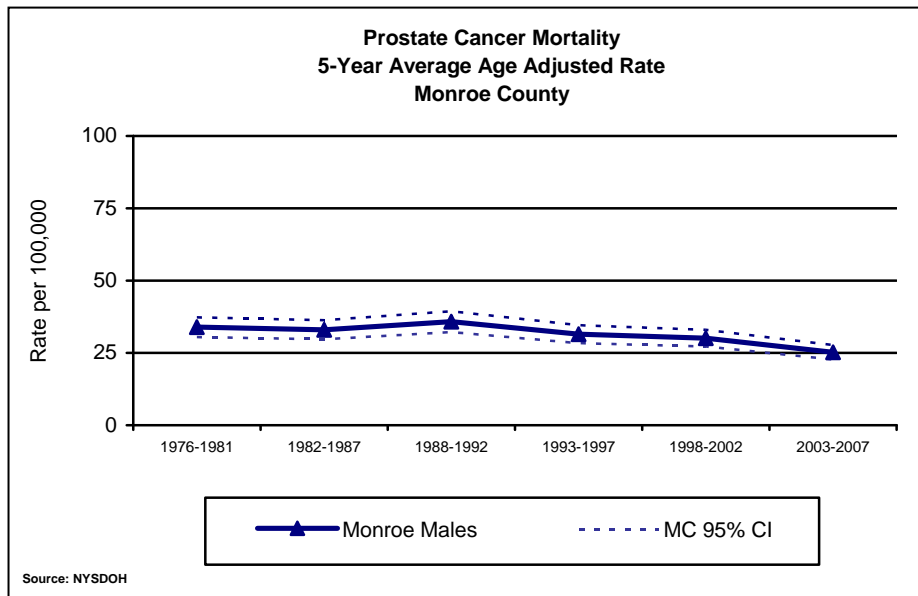
In 2003-2007 the incidence rate of lung cancer for women was 11% lower in Monroe County compared to NYS exclusive of NYC (56.6/100,000 vs. 63.6/100,000).

## Prostate Cancer

The prostate cancer incidence rate in Monroe County increased through 1993-1997, decreased in 1998-02, then leveled off. The incidence rate in NYS exclusive of NYC increased gradually through 1998-2002 then leveled off. The incidence rate in Monroe County has been higher in Monroe County than the rate in New York State exclusive of NYC, except during the five year period 1998-2002. In 2003-2007, the rate in Monroe County was 8% higher than the rate in NYS exclusive of NYC (186.1/100,000 vs. 172.3/100,000).

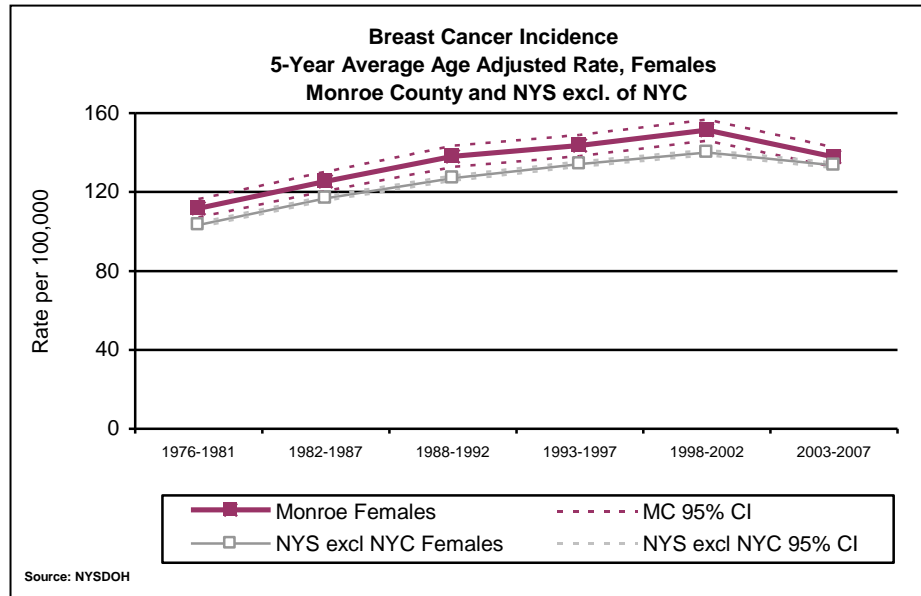


The prostate cancer mortality rate in Monroe County declined between 1988-1992 and 2003-07. A similar trend occurred in New York State Exclusive of NYC. (not shown in graphic)



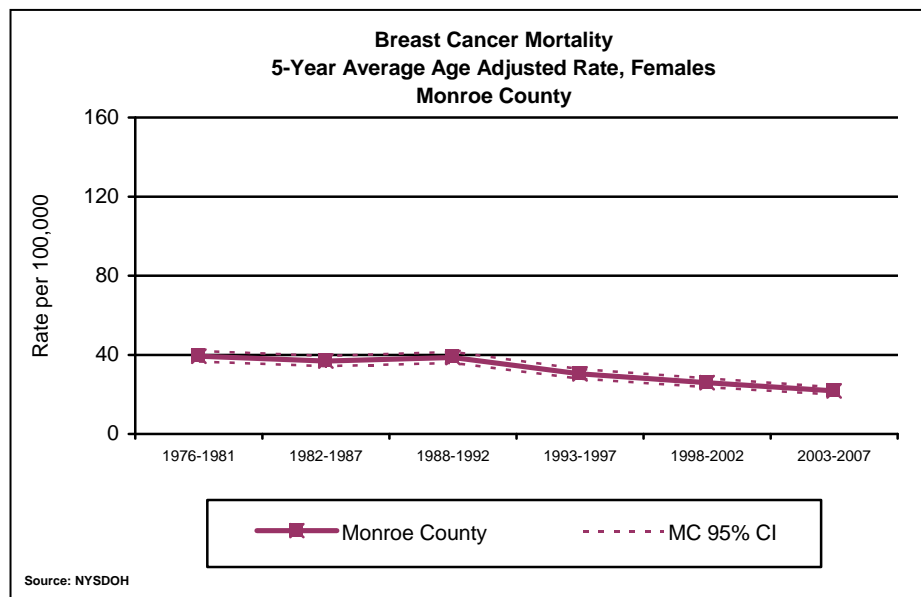
## Breast Cancer

In both Monroe County and NYS exclusive of NYC, female breast cancer incidence rates increased between 1976-81 and 1998-02, and then declined. Up until 1998-02, the rate was higher in Monroe County compared to New York State exclusive of NYC. In 2003-2007 the difference in the rates was no longer statistically significant.



Decreased mammography utilization and a decline in the use of hormone replacement therapy are two factors that may have contributed to the decline in incidence.

Breast cancer mortality rates in Monroe County declined overall since 1988-1992. A similar trend occurred in New York State exclusive of NYC. (not shown in graphic)



### **Less Common Cancers - Trends**

Between 1976-1981 and 2003-2007 the incidence rates for the following cancers decreased: stomach, larynx (men only), ovarian (women) and cervix (women). During the same time period, the incidence rates for the following cancers increased: Melanoma of the skin, kidney/renal pelvis, thyroid, non-Hodgkins Lymphoma, liver/intra-hepatic bile duct, and urinary bladder.

Mortality rates declined for the following cancers: stomach, oral cavity/pharynx and Hodgkins Lymphoma and cervix (women). Liver cancer mortality increased.

Similar trends occurred in NYS exclusive of NYC

### **Less Common Cancers – Differences between Monroe County and NYS exclusive of NYC**

Listed below are several instances where the rates of some of the less common cancers are lower in Monroe County compared to NYS exclusive of NYC.

	Age Adjusted Rate per 100,000		% difference in rates between Monroe County and NYS exclusive of NYC
	Monroe County	NYS excl NYC	
Melanoma incidence, males	18.7	23.1	19% lower
Melanoma incidence, females	12.3	14.5	15% lower
Melanoma mortality, males	2.7	3.9	31% lower
Melanoma mortality, females	1.1	1.7	35% lower
Cervix/uteri cancer incidence females	5.9	7.5	21% lower
Thyroid cancer incidence, females	12.7	19.0	33% lower

### **Disparities**

As shown in the table below, there are significant disparities in the case fatality rates between African Americans and Whites. Since there are routine tests for the early detection of colorectal, breast, cervical, and prostate cancers, the disparities in these case fatality rates are most likely due to differences in screening rates, and stage of diagnosis.

Cancer Type	Case Fatality Rates			
	White females	African American females	White males	African American males
All cancers	.34	.42	.37	.42
Colorectal Cancer	.33	.40	.38	.62
Breast Cancer	.16	.21		
Cervical Cancer	.21	.40		
Prostate Cancer			.13	.16

### **Conclusions**

Over 4,000 cancers are diagnosed each year among Monroe County residents. Cancer is the second leading cause of death and accounts for 1,500 deaths annually. The incidence and mortality rates for all cancers combined in Monroe County are not different compared to Upstate. Between 1976-1981 and 2003-2007, the incidence rate of all cancers combined increased, while the mortality rate declined.

Among men, the most common forms of cancer are prostate, lung/bronchus and colorectal. Among women, the most common forms are breast, lung/bronchus and colorectal. These cancers account for about ½ of the new cases and cancer deaths in Monroe County. The declines in overall cancer death rates are mainly due to the declines in the rates for the three most common causes of cancer among men (prostate, lung/bronchus and colorectal) and two of the three most common causes of cancer among women (breast and colorectal).

<sup>1</sup> Note in 2001, changes were made to the classification of some cancers with the introduction of the 3rd Edition of the International Classification of Diseases for Oncology (ICD-O-3). The trend data in this report are based on ICD-O-2 in order to maintain consistency in coding. The point in time data for 2003-2007 are based on ICD-O-3. This explains the difference in the rates shown in the trend chart for female cancer incidence and the rates noted in the text.

<sup>2</sup> Centers for Disease Control and Prevention. *Women and Smoking: A Report of the Surgeon General*. August 30, 2002 / 51(RR12);1-30  
<http://www.cdc.gov/mmwr/preview/mmwrhtml/r5112a4.htm>